In the Claims

The claims are as follows:

1. (Original) A bi-negative pressure turbine for a high turbulence mill, which comprises a base plate (29) and a plurality of blades (15) provided at both sides of the base plate (29) and having the same spiral orientation, wherein the blades at either side of the base plate are uniformly arranged in a circumference direction of the base plate; and the blades at one side of the base plate alternate with those at opposite side of the base plate in the circumference direction of the base plate.

2. (Original) The bi-negative pressure turbine according to claim 1, wherein

each blade (15), having a curved profile with an L-shaped cross section, is composed of a base (153) and a rib portion (154) extending from the base in a direction perpendicular to the base, with two screw holes (151, 152) perforated at an inner side portion of the base through which bolts are inserted to fix the blade (15) onto the base plate (29).

3. (Original) The bi-negative pressure turbine according to claim 2, wherein

the base of the blade is formed with a first inclined surface (155) at an outer side end thereof, and an angle α formed between the first inclined surface and a plane of the base plate (29) is in a range of 30° -60°.

4. (Original) The bi-negative pressure turbine according to claim 2, wherein

the blade (15) is further formed with a second inclined surface (156) at a side end thereof closer to a centre of the base plate (29), and an angle β formed between the second inclined surface (156) and the plane of base plate (29) is in a range of 45° -70°.

5. (Currently Amended) The bi-negative pressure turbine according to ~~claims 2, 3 or 4~~ claim 2, wherein the curved profiles of the blades are formed in such a manner that radial outer edges (157) of bases (153) of the blades (15) coincide with a base circle (291) of the base plate (29), radial inner edges (158) of the blades (15) are positioned on a circle concentric with the base circle (291), and a transverse inner edge (160) and a transverse outer edge (159) of each blade are two arcs with the same circle centre.

6. (Original) The bi-negative pressure turbine according to claim 5, wherein the same circle centre of the transverse inner edge and the transverse outer edge of the blade is a point at which a first arc and a second arc intersect;

wherein the first arc has a radius as long as a radius of the base plate; and takes a first intersection point (C) at which the base circle (291) of the base plate (29) and a first line (OC) passing through the centre (O) of the base plate (29) intersect, as its circle centre; and

the second arc has a radius as long as the radius of the base plate; and takes a second intersection point (B) at which an arc (292) taking the centre (O) of the base plate as its centre and having a radius 0.25-0.35 times as long as the radius of the base plate and a second line passing through the centre (O) of the base plate and having a degree of 45° formed with the first line (OC) intersect, as its circle centre.

7. (Original) The bi-negative pressure turbine according to claim 1, further comprising a plurality of toothed impact plates (20) arranged in pairs between two adjacent blades (15) at both sides of the base plate (29).

8. (Original) The bi-negative pressure turbine according to claim 7, wherein the toothed impact plate (20) comprises:

a mounting portion (210) formed with two mounting holes (230, 240) through which bolts are inserted to fix the toothed impact plate (20) onto the base plate (29); and

an operating portion (220) located above the mounting portion (210), which is integrated with the mounting portion (210) via a swallow-tailed slot thereof and is formed on its top with rectangular teeth extending in a circumference direction of the base plate (29).

9. (Original) A high turbulence mill for producing supermicro powder, which comprises:

a driver device (6) provided on a base (8) and comprising a motor and a driving shaft coupled with the motor;

a hollow grinding casing (21) arranged above the base (8) and having a toothed ring-shaped guide stator (18) fixed to an inner circumference thereof;

a bi-negative pressure turbine (16) rotatably mounted within the grinding casing (21) and driven by the driving device (6);

a hopper (1) for delivering materials into the grinding casing (21) via a material feeding pipe (4);

a material discharging pipe (9) communicated with the grinding casing, for discharging

pulverized products; and

a control device for electrically controlling the high turbulence mill.

10. (Original) The high turbulence mill according to claim 9, wherein the grinding casing (21) is water-cooled and is divided into an inner chamber and an outer chamber, and the outer chamber is communicated with a circulating water tank (2).

11. (Currently Amended) The high turbulence mill according to claim 9 ~~or 10~~, further including a spiral conveyer (14) driven by a speed-adjustable electric motor (3), both ends of the spiral conveyer (14) respectively connected with the hopper (1) and the material feeding pipe (4), for delivering materials into the grinding casing.

12. (Original) The high turbulence mill according to claim 9, wherein an end of the material discharging pipe (9) is connected with a spherical connector (11), a cyclone collector, a cloth-bag collector, and an inducing fan in series, for collecting the finalized products.

13. (Currently Amended) The high turbulence mill according to ~~anyone of claims 9-12~~ claim 9, wherein

the grinding casing (21) is provided with an inner flange plate (12) and an outer flange plate (13) at each of left and right sides thereof;

a mounting hole is formed at a center portion of one inner flange plate (12) at one side, and the driving shaft of the driving device (6) goes through the mounting hole and is fixed to the bi-negative pressure turbine (16) located within the grinding casing (21) by a bolt (10);

a material inlet is formed on a region of said one inner flange plate (12) over the mounting hole, and the material feeding pipe (4) is connected to the material inlet; and

a material outlet is formed at a center portion of the inner flange plate at the opposite side, and the material discharge pipe (9) is connected to the material outlet.

14. (Original) The high turbulence mill according to claim 9, wherein the toothed ring-shaped guide stator (18) has 50 or more serrate teeth, each of which has a tooth angle between 40° -50°.

15. (Original) The high turbulence mill according to claim 9, wherein the bi-negative pressure turbine comprises a base plate (29) and a plurality of blades (15) provided at both sides of the base plate (29) and

having the same spiral orientation, wherein the blades at either side of the base plate are uniformly arranged in a circumference direction of the base plate; and the blades at one side of the base plate alternate with those at opposite side of the base plate in the circumference direction of the base plate.

16. (Original) The high turbulence mill according to claim 15, wherein

each blade (15), having a curved profile with an L-shaped cross section, is composed of a base (153) and a rib portion (154) extending from the base in a direction perpendicular to the base, with two screw holes (151, 152) perforated at an inner side portion of the base through which bolts are inserted to fix the blade (15) onto the base plate (29).

17. (Original) The high turbulence mill according to claim 16, wherein

the base of the blade is formed with a first inclined surface (155) at an outer side end thereof, and an angle α formed between the first inclined surface and a plane of the base plate (29) is in a range of 30° - 60° .

18. (Original) The high turbulence mill according to claim 16, wherein

the blade (15) is further formed with a second inclined surface (156) at a side end thereof closer to a centre of the base plate (29), and an angle β formed between the second inclined surface (156) and the plane of base plate (29) is in a range of 45° - 70°.

19. (Currently Amended) The high turbulence mill according to claim 17 ~~or 18~~, wherein the curved profiles of the blades are formed in such a manner that radial outer edges (157) of bases (153) of the blades (15) coincide with a base circle (291) of the base plate (29), radial inner edges (158) of the blades (15) are positioned on a circle concentric with the base circle (291), and a transverse inner edge (160) and a transverse outer edge (159) of each blade are two arcs with the same circle centre.

20. (Original) The high turbulence mill according to claim 19, wherein the same circle centre of the transverse inner edge and the transverse outer edge of the blade is a point at which a first arc and a second arc intersect;

wherein the first arc has a radius as long as a radius of the base plate; and takes a first intersection point (C) at which the base circle (291) of the base plate (29) and a first line (OC) passing through the centre (O) of the base plate (29) intersect, as its circle centre; and

the second arc has a radius as long as the radius of the base plate; and takes a second intersection point (B) at which an arc (292) taking the centre (O) of the base plate as its centre and having a radius 0.25-0.35 times as long as the radius of the base plate and a second line passing through the centre (O) of the base plate and having a degree of 45° formed with the first line (OC) intersect, as its circle centre.

21. (Original) The high turbulence mill according to claim 15, further comprising a plurality of toothed impact plates (20) arranged in pairs between two adjacent blades (15) at both sides of the base plate (29).

22. (Original) The high turbulence mill according to claim 21, wherein the toothed impact plate (20) comprises:

a mounting portion (210) formed with two mounting holes (230, 240) through which bolts are inserted to fix the toothed impact plate (20) onto the base plate (29); and

an operating portion (220) located above the mounting portion (210), which is integrated with the mounting portion (210) via a swallow-tailed slot thereof and is formed on its top with rectangular teeth extending in a circumference direction of the base plate (29).